Similarly draw the lines as in the figure, through b_1, b_2, and find the traces of the line so represented, viz., β_1, β_2. In this case the *visible trace* is β_1, or the shadow falls upon the *horizontal plane*.

2. *For straight lines.*—It is obvious that as the shadow of a straight line upon any plane is itself a straight line, this problem only requires us to find the shadows of any two points in that line, the given extremities being usually the points most convenient for the operation.

When the shadows of the two extremities fall both upon the horizontal, or both upon the vertical plane, we have only to draw the line to join them, and the shadow will be constructed.

When the shadow of one extremity, a_2, is on the vertical plane, and the shadow of the other, β_1, on the horizontal, the shadow of the line will be composed of two separate parts, $_2p$ on the vertical, and $\beta_1 p$ on the horizontal plane, the point p being common to the two segments of the shadow, and situated in the ground-line OX.

Now it is quite clear that if the vertical plane were removed, the line $\beta_1 a_1$ would be the shadow on the horizontal plane. The presence of that plane in its place, therefore, does not affect the position of that shadow so far as the part in front is concerned, whence $\beta_1 p$ is the portion of the shadow which actually falls upon the horizontal plane.

Wherefore, find the traces a_1, β_1 of the lines through the extremities of the given line ($a_1 b_1$, $a_2 b_2$) drawn parallel to $R_1 R_2$, and draw $a_1 \beta_1$ cutting the ground line in p. This will be the shadow on the horizontal plane.

In a similar manner, find the vertical traces a_2, β_2, and by the same kind of reasoning it will appear that $a_2 p$ is the position of the shadow of the line which falls upon the vertical plane.*

Wherefore $\beta_1 p a_2$ is the entire shadow of the line whose projections are $a_1 b_1$, $a_2 b_2$, the rays being parallel to R_1, R_2.

The application of these principles will enable us to find the shadow of any figure bounded by rectilineal edges, whether it be plane or solid, with considerable facility. Some modifications may be advantageously introduced when the parts of the figure have specified relations, especially when there are several sets of parallel lines—a circumstance of continual occurrence in architectural figures. A few remarks on some of the more frequently occurring cases may be useful, and will probably be hereafter given in this work.

With respect to the shadows of curves and curve surfaces, we can only as a *general rule* find the shadows of points taken conveniently in them, and connect these points by hand in the usual manner. Certain cases, however, form exceptions to this general rule; and, fortunately, these cases include the far greater part of architectural curves and curve surfaces. Upon these, too, a few remarks will be necessary.

* If it should be questioned whether $a_2\beta_1$, $a_2\beta_2$ must necessarily meet OX in the same point p, we have only to reflect that the lines $a_1 a_2$ and $\beta_1 \beta_2$ are, in the eidograph, parallel lines, and hence situated in the plane of shade. That plane cuts the horizontal and vertical planes in the lines of shadow, and consequently the lines of shadow cut OX in the same point that the plane of shade cuts it. Whence the conclusion follows.

STATE OF THE LONDON CHURCHYARDS.

"Give us a little" more "earth, for charity."

SIR,—In *agriculture* the number of *sheep* to an acre should, I believe, be *five*, at the utmost, sometimes four.—Now were any one to shew us an acre and say, "that will be the sole food of at least *twenty-five* sheep for the next twelvemonth," should not we be struck with horror, and try to prevent, if possible, such inhumanity? Change common humanity for decency and health, but retaining a spice of the first, as regards the feelings of survivors, and we have too true a principle and calculation applicable to the state of provision for the dead in London.

Our "pious ancestors" are not to be blamed for this. They provided for the necessities and perhaps prospects of their times, and could not in 1500, or even 1700, anticipate the requirements of 1846. Neither are the clergy, though it might be as well if they were to express their opinions more publicly. The writer knows that some of the most justly esteemed of them would be favourable to any fair or better plan. If parishioners will continue to keep up, amidst successive increases of population, these shockingly crowded places, and provide nothing better, how can one man of limited means (great part of which, God knows, often goes to the poor) help the unconcern, or heartlessness, or meanness of hundreds?

Or, is it not enough that here, as in the abominable system of punishment in the army (now, by Divine goodness, about to follow the slave-ship and the inquisition), we are behind all other nations?—that, in respect for the decent disposal of the dead, and care for the health of the living, many savages might "flout" us? "Bad words," it may be, but applied to a very bad state of *things*.

With great respect for both the church and parish of *St. Sepulchre*, Snow-hill, the writer must consider it *one* of the worst situated in this respect. With a population including Middlesex, of 13,500, it has two "slips" on either side of the church, which together can scarcely, if at all, exceed a *quarter of an acre*. There are vaults under the church; but if any one, having perceived the effluvia some yards from the opened door, can descend, unimpelled by duty or private feeling, he has stronger nerves than the writer's, although sorely taxed in this troublesome world.

At *St. Andrew's*, Holborn, the vaults are inoffensive; but for about 55,000 inhabitants (with St. George the Martyr, Queen-square) it has only this crowded ground, and the *reduced* one in Gray's Inn-road, before mentioned.

St. Bride's is almost exactly on a par with St. Sepulchre's, and fever is said to be almost every year produced in the neighbourhood.

St. Bartholomew the Great (2,000 inhabitants), Smithfield, the oldest church in London or Middlesex, has too small a churchyard, but by no means in proportion to the foregoing. The same applies to *Cripplegate* (15,000 inhabitants), where is a bastion of the old wall of London.

St. James's, Clerkenwell, with about 60,000 inhabitants, has the limited ground, certainly considerably less than an acre, at the church—all trodden ground—grass is rare and evanescent; perhaps an acre at Pentonville Chapel rather better, but inconvenient for this distance; and a small plot, common to *St. John's*, which has its own "slip" at the back of the church, still less. It is needless to say that these parishes require, for decency and propriety, some where, at least *four* times as much now; and what will they do, with many others, 100 years hence? The excellent rectors, Messrs. Faulkner and Hughes, the writer knows, are amongst those who would be favourable to a better state of things.

J. D. PARRY.

P.S. May a few words be permitted on *St. Pancras Church*, alluded to in a previous number? You have omitted what you would well know, on consideration, viz., that besides Mr. Inwood's being sent to Athens by the parish (at perhaps some 200*l.* expense only) he published a handsome folio on the *Erectheion*, with good plans and engravings; this Erectheion *Ionic* having beautiful mouldings, copied all round St. Pancras, not to be found in any other instance. You have not mentioned, also, that the columns surrounding the tower have the lotus-leaved capitals first found by *Stuart*, at the *Temple of the Winds*, copied above. If the upper part of the capitals had been filled in, they would have been beautiful. The windows and "Greek tiles,"—instead of balustrades or coping—are unhappily ugly. But the eastern central sweep is elegant,—after the "Choragic monument" or "Lantern;" and within it are six very bold *verd antique* columns of scagliola. This church is *said* to have cost 70,000*l.*; more than *double* St. Martin's, and *eight* times St. James's.

J. D. P.

WEST HAM GAS WORKS.—The tender of Messrs. Curtis, of Stratford, for the erection of these works, has been accepted. The contract is 1,994*l.*, which includes two gasometers; all to be completed within two months. Messrs. Curtis's estimate was 200*l.* less than one, and 80*l.* below several other tenders.

PROVINCIAL NEWS.

AT a meeting of the Society for building, enlarging, and repairing churches and Chapels, held on the 20th July, it was determined to grant assistance towards the erection of eleven new churches for 27,000 persons; the rebuilding with enlargement of seven parish churches; and the enlargement of nineteen churches and chapels. Seven of the new churches are to be for the accommodation of the inhabitants of districts to be endowed by the Ecclesiastical Commissioners—viz., Northward, in the parish of Stoke-on-Trent. Hope and Etruria, in the Staffordshire potteries. St. George, Darlaston. Denton, near Manchester. Prestoke, near Bolton-le-Moors, and Coldhurst, in the parish of Prestwick. The remainder are to be built at Cirencester, Idregthay-par-Winksworth, Henley-on-Thames (a free church), and Greenwich. The churches to be rebuilt are at Baildon, near Bradford; Tremaer, near Cardigan; Birkenhall, near Taunton; Ellerton, near Selby (now propped up and expected soon to fall); Ewell, Surrey; Llanvabon, near Cardiff (very much dilapidated); and North Formby, near Hull. The churches to be enlarged and otherwise rendered more efficient are at Ditchingham, near Bungay; St. Columb Major and Stratton, in Cornwall; Elworthy, near Taunton; St. James's Church, Preston Hutton, near Wells; Ifield, near Crawley; Heath, near Ashby-de-la-Zouch; Dartford, Kent; Balcomb, near Cuckfield; Eaton Constantine, near Shrewsbury; St. Sampson, York; Globy, near Leicester; Lingfield, near East Grinstead; Stow-in-the-World; Othery, near Bridgewater; Nailsea, near Bristol; Ardington, near Wantage; and St. Olkmund, Duffield, Derbyshire. The society, since 17th Nov. last, has expended 20,360*l.* towards the erection and the rebuilding of sixty-nine churches, for the accommodation of 37,367 persons, 30,277 of them free. At last meeting, 5,540*l.* of the above sum was voted.——The church of St. Lawrence, Reading, is to be repewed and restored by subscription, at an expense of 2,000*l.*, according to architectural plans and estimates lately prepared.——The church of Bebington is also to be renovated.

THE IRON TRADE.

THE quarterly meetings of the iron masters are over, the last of them being held at Birmingham on Saturday week; to which meeting all final arrangements were deferred. Attempts had been made to change the quarter day, but the effect intended was not produced. As it is, however, fortunes have been won and lost in the uncertainties attendant on the anticipations of the holders. The demand for iron for railway purposes has not been so great as has been represented, and the anticipatory statements which have occasionally appeared, have in some respects been fallacious; but the quarterly meetings of the Staffordshire masters went off with a decided tendency to high future prices. They had resolved, on the special ground of a stoppage of works in England, Wales, and Scotland, from the intense heat, more than for other alleged reasons, to raise the price of iron at the July quarterly meeting; an advance of even 1*l.* a ton being meditated by one of the largest makers in South Staffordshire; but the prices of the previous quarter-day were in the main barely supported. Bar iron, however, is said to have fetched about 10*l.*; hoop, 10*l.* 10s.; and pig, 4*l.* 15s. up to 5*l.* 10s.; and since the quarterly meetings the demand in the Scotch iron trade, at least, has been very great; the prices following, at Glasgow, being not only firmly maintained, but still manifesting an upward tendency:—"Glasgow, July 17th. A large business has been done by the dealers at 70s. for No. 3, 72s. 6d. for mixed Nos., and 74s. to 75s. for all Nos. Cash f.o.b. Several contracts have been made by makers, at 77s. 6d. for all No. 1. Cash on delivery.—July 18. The price of Scotch pig-iron, delivered free on board here, may be quoted to-day at for all No. 1, and for 3-5ths No. 1, and 2-5ths No. 3, 75s. for all. No. 3, 70s. 6d. and 71s. 6d. The makers have effected sales at 80s. for mixed Nos., less 4 per cent. discount, cash in a month. The demand during the week has been very great, and the above prices for the present are firmly maintained, there

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